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Chemical and Veterinary Drug Residues in Israeli Animal Products - The VSAH 2012 Survey

Report Categories:
Livestock and Products

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Report Highlights:

Israel's Veterinary Services and Animal Health (VSAH) unit monitors the presence of chemical and veterinary drug residues in animal products for human consumption on a national basis. The 2012 maximum residue levels (MRL) survey detected low levels of chemical and drug residues. Israeli animal products MRL standards combine elements of both U.S. and European standards.

Executive Summary:

Israel's Veterinary Services and Animal Health (VSAH) is a largely independent unit within the Ministry of Agriculture and Rural Development (MARD). Responsible for animal health and disease control, VSAH in cooperation with the Ministry of Health (MOH) monitors the presence of chemical and drug residues in animal products for human consumption. The 2012 maximum residue levels (MRL) survey again detected the low level presence of chemicals and veterinary drugs in a number of Israeli animal products. The survey found that Israeli pork and mutton products were nevertheless below European MRL standards' levels.

General Information:

The VSAH 2012 MRL Survey

Minister of Agriculture Yair Shamir affirms that the VSAH 2012 MRL survey is a key tool utilized by the MARD to ensure the quality of food marketed to the Israeli public. Minister Shamir recently reassured Israeli consumers that the MARD will continue to perform periodic inspection and testing to ensure the public health.

The Veterinary Services and Animal Health unit tests for the presence of chemical and veterinary drug residues in beef, milk (bovine, ovine, and caprine), pork, mutton, poultry, eggs, farmed game (ostriches), aquaculture, and honey. Specifically the VSAH MRL survey assesses the presence of veterinary drugs, pesticides, and environmental contaminants in animal products.

The survey conducted annually since 1991, seeks to ensure that food sold in Israel does not contain banned substances or residues of permissible compounds at elevated levels which could adversely impact public health. It also seeks to detect trends in the use of non-approved medications, as well as the incorrect utilization of approved drug compounds. The goal of the VSAH MRL survey is to collect data, evaluate risk, and recommend corrective actions.

Random Sampling and Testing Methodology

Random sampling size determination is premised on domestic production levels combined with Israeli consumption rates. Samples are taken at both farms and slaughter house facilities; testing is conducted at VSAH laboratories. For the VSAH 2012 MRL survey, approximately 14,650 animal product samples were taken from beef and dairy cattle, sheep, hogs, poultry (broilers and eggs), turkeys, fish, and bee honey.

FAS Tel Aviv finds that Israel's animal product sampling program exceeds the European standard. The European sampling approach calls for the sample size to be based on the volume of production. Under this approach, a relatively smaller number of samples are pulled from a large range of animal products. Following this sampling criteria, Israel should only be taking roughly 3,000 laboratory samples. The Government of Israel justifies its expanded sampling size as means of obtaining more statistically significant results. Testing is however conducted in accordance with more conventional U.S. and other developed economies' testing methodologies.

Israel's MRL committee, overseen by the MARD and MOH, determines and implements the current year's VSAH MRL survey. Over the past two decades the committee has experimented with a number of different survey methods. Initially Israel favored the U.S. approach premised on the principle of risk assessments and statistical significance in accordance with levels determined by the World Health Organization (WHO), the UN Food and Agriculture Organization (FAO), and the Codex *alimentarius*.

For the VSAH 2012 MRL survey, Israel's MRL committee opted to combine aspects of both the European sampling and the U.S. testing approaches. Under the current sampling and testing regime, a sample size is determined in accordance with accepted statistical principles. However with the larger sample size of tested products, the statistical significance of abnormal findings tends to increase.

Residue analysis and results for beef and calf 1/1/2012-31/12/2012

Category	Compounds (no. of compounds)	Results exceeding MRL	%Results exceeding MRL	Performed
Beef	Beta-lactam (10)	0	0	76
	Chloramphenicol	0	0	222
	Fluoroquinolones (8)	0	0	105
	NSAIDs (7)	0	0	215
	OC pesticides (10)	0	0	186
	PCBs (7)	0	0	188
	Sulfonamides (10)	2	1.9	106
	Tetracyclines (3)	0	0	101
	Achieved			**1199**
Calf	beta-agonist (2)	0	0	99
	Cadmium	0	0	112
	Ethinyl estradiol	0	0	65
	Diethylstilbestrol	0	0	1
	Achieved			**277**

Residue analysis and results for pork and sheep 1/1/2012-31/12/2012

Category	Compounds (no. of compounds)	Results exceeding MRL	%Results exceeding MRL	Performed
Pork	Beta-agonist (2)	0	0	87
	Beta-lactam (10)	0	0	27
	Chloramphenicol	0	0	114
	Fluoroquinolones (8)	0	0	85
	Macrolides (3)	0	0	87
	Sulfonamides (10)	0	0	87
	Tetracyclines (3)	0	0	85
	Achieved			**572**
Sheep	Beta-lactam	0	0	52
	Fluoroquinolones (8)	0	0	54
	Ivermectin	3	2.9	104
	Macrolides (3)	0	0	55
	Sulfonamides (10)	0	0	54
	Tetracyclines (3)	6	12.0	50
	Achieved			**369**

Residue analysis and results in poultry 1/1/2012-31/12/2012

Category	Compounds (no. of compounds)	Results exceeding MRL	%Results exceeding MRL	Performed
Broiler	Beta-lactam (10)	0	0	111
	Cadmium	4	2.4	166
	Fluoroquinolones (8)	2	1.4	147
	Ethinyl estradiol	0	0	81
	Ionophores (6)	1	0.5	183
	Macrolides (3)	0	0	148
	Nicarbazine	8	3.9	203
	Nitrofurans (4)	0	0	123
	Nitroimidazoles (5)	0	0	194
	Sulfonamides (10)	0	0	147
	Tetracyclines (3)	0	0	147
	Achieved			**1650**

Residue analysis and results in poultry 1/1/2012-31/12/2012

Category	Compounds (no. of compounds)	Results exceeding MRL	%Results exceeding MRL	Performed
Turkey	Beta-agonist (2)	0	0	141
	Beta-lactam (10)	0	0	125
	Chloramphenicol	0	0	218
	Cadmium	6	4.6	131
	Fluoroquinolones (8)	0	0	142
	Macrolides (3)	0	0	94
	OC pesticides	0	0	213
	PCBs (7)	0	0	210
	Sulfonamides (10)	3	2.1	142
	Tetracyclines (3)	0	0	142
	Achieved			**1558**

Residue analysis and results in poultry and eggs 1/1/2012-31/12/2012

Category	Compounds (no. of compounds)	Results exceeding MRL	%Results exceeding MRL	Analyses performed
Eggs	Beta-lactam (10)	0	0	129
	Chloramphenicol	0	0	246
	Clopidol	44	17.6	250
	Fluoroquinolones (8)	0	0	99
	Ionophores (6)	52	21.7	240
	Macrolides (3)	0	0	164
	Nicarbazine	1	0.4	243
	Nitroimidazoles (5)	0	0	241
	OC pesticides (10)	0	0	237
	PCBs (7)	0	0	232
	Pyrethroids (4)	0	0	235
	Sulfonamides (10)	2	1.2	165
	Tetracyclines (3)	5	2.9	170
	Achieved			**2651**

Residue analysis and results 1/1/2012-31/12/2012

Category	Compounds (no. of compounds)	Results exceeding MRL	%Results exceeding MRL	Analyses performed
Fish	Beta-lactam (10)	0	0	112
	Chloramphenicol	0	0	216
	Florfenicol	0	0	216
	Fluoroquinolones (8)	0	0	112
	Macrolides (3)	0	0	114
	Malachite green (3)	1	0.5	205
	Methyl testosterone	0	0	207
	OC pesticides (10)	0	0	183
	PCBs (7)	0	0	181
	Sulfonamides (10)	0	0	112
	Tetracyclines (3)	1	0.9	112
	Achieved			**1770**

Residue analysis and results in milk 1/1/2012-31/12/2012

Category	Analysis	Results exceeding MRL	%Results exceeding MRL	Performed
Milk (cow)	Beta-lactam (10)	0	0	315
	Aflatoxin M1	0	0	233
	Chloramphenicol	0	0	264
	Ivermectin	0	0	232
	Fluoroquinolones (8)	0	0	188
	Macrolides (12)	0	0	301
	Nitrofurans (4)	0	0	236
	OC pesticides (10)	0	0	244
	OP pesticides (11)	0	0	245
	PCBs (7)	0	0	215
	NSAIDs (7)	1	0.4	264
	Sulfonamides (10)	0	0	300
	Tetracyclines (3)	0	0	313
	Achieved			**3350**
Milk (sheep & goat)	Beta-lactam (10)	0	0	71
	Aflatoxin M1	0	0	69
	Chloramphenicol	0	0	75
	Ivermectin	0	0	70
	Fluoroquinolones (8)	0	0	46
	Macrolides (12)	0	0	78
	Nitrofurans (4)	0	0	73
	OC pesticides (10)	0	0	68
	OP pesticides (11)	0	0	69
	PCBs (7)	0	0	63
	NSAIDs (7)	0	0	75
	Sulfonamides (10)	0	0	75
	Tetracyclines (3)	0	0	78
	Achieved			**910**

Residue analysis and results in honey 1/1/2012-31/12/2012

Tested Material	Number of Tests	MRL (ppb)	Exceeding the limit	Comments
Coumaphos	35	100	0	
Tetracycline	38	100	0	
Chlormphenicol	19	Use not allowed	0	
Sulfonamides	45	Use not allowed	1	
Streptomycine	38	Use not allowed	0	
Nitrofurans	10	Use not allowed	0	
Amitraz	31	200	0	
Fluvalinate	33	50	0	
OC- Pesticides	20	No limit	0	
As/Cd	25	As<7ppb Cd<1ppb Hg<3.3ppb Pb<3.7ppb	0	Additional metals that were checked Hg/Pb
Fumahili	25	No limit	0	
Tylosin	31		0	
Total Tests (Achieved)	**340**		**0**	

Source: Israeli Veterinary Services